
A NEW SPECIES OF
DIOCLEA KUNTH
(DIOCLEINAE, FABACEAE)
FROM THE VENEZUELAN
GUAYANA

Study of collections with fruit from the Venezuelan Guayana, particularly those of Steyermark, has resulted in the identification of a new species of *Dioclea*. Prior to the availability of these collections many specimens of this new species were determined incorrectly as *D. macrocarpa* Huber (1909).

Dioclea ruddiae R. H. Maxwell, sp. nov.

TYPE: Venezuela. Amazonas: Cerro Huachamacari, Río Cunucunuma. Occasional in slope forest near Camp 2, 1,100 m, 16 Dec. 1950, Maguire, Cowan & Wurdack 29930 (holotype, US; isotypes, F, K, GH, IAN, MO, NY, P, RB, S, U, US). Isotypes may have been annotated *Dioclea macrocarpa* Huber by me from 1969 to 1980. Figure 1.

Foliola subcoriacea, subconduplicata, elliptica, ad ca. 12.5 × 8 cm, basi rotundata; stipulis non productis, acutis. Flores ca. 1.5 cm longi, calycis lobis 4, supero lobo calycis integro; vexillum valde reflexum, orbiculari; carinis obtusis rostratis; staminibus 10, antheris perfectis; ovario 4-ovulato. Legumina turgida, ad ca. 13 × 4 × 3 cm, indehiscentia, seminibus 1-4; seminibus ellipsoideis; hilo oblongo, ca. 5.5 mm longo.

Lianas, to 30 m tall; stems terete, the younger stems with mostly appressed, ferruginous pubescence, the older bark glabrous, splitting horizontally, the lenticels light brown and conspicuous. *Leaves* trifoliolate, the leaflets subcoriaceous, subconduplicate, the lamina mostly elliptic, the terminal leaflet lamina to ca. 12.5 × 8 cm, the laterals to ca. 11 × 6 cm, the upper surface reticulate, somewhat sulcate, glabrous or glabrescent on the primary veins, the lower surface with light brown pubescence, the apices acute or with drip tips to 2 cm long, the bases rounded, the primary

lateral veins in 6-9 pairs; petioles 4-9 cm long, the rachis 5-25 mm long, this and petiole with sparse, mostly ascending pubescence, the pulvinules ca. 7 mm long, densely pubescent; stipules not produced below insertion, acute, 1-3 mm long; stipels caducous or possibly absent. *Inflorescence* axillary, single, 11-35 cm long, ferruginous pubescent, flowering to ca. $\frac{4}{5}$ its length; tubercles short-clavate; bracts acute, ca. 2.5 mm long, semi-persistent, inserted at the base of the tubercle stalk; bracteoles ovate, ca. 2 × 1.5 mm, persistent; pedicels ca. 5 mm long. *Flowers* with buds straight, the lower calyx lobe up-curved, flowers ca. 1.5 cm long, the calyx tube ca. 7 mm long, ferruginous pubescent, black velutinous inside extending up the lobes, the upper lobe obtuse, entire, ca. 7 × 5 mm, the lateral lobes slightly falcate, ca. 8 × 3 mm, the lower lobe lanceolate, ca. 10 × 4 mm; standard strongly reflexed, orbicular, ca. 9 × 10 mm with a claw ca. 4 mm; wings obliquely oblong, ca. 6 × 7 mm with a claw ca. 5 mm long; keels obliquely oblong, 4-6 mm long with a claw ca. 5 mm long, the upper margin basally auriculate, unlobed, the beak obtuse; stamens 10, pseudomonadelphous, the base of the vexillary filament free ca. 2 mm, sparsely pubescent, the anthers perfect, ca. 1 mm long; pistil straight ca. 10 mm then geniculate, rising distally ca. 6 mm, the ovary ca. 5 mm long, sessile, ca. 4-ovulate, hirsute with mixed canescent, fuscous and ferruginous pubescence, the hairs to 1 mm long, the style hirsute, swollen distally then narrowing to the incurved, somewhat subterminal stigma. *Fruit* turgid, fleshy, oblong, to ca. 13 × 4 × 3 cm, indehiscent, the exocarp with brown pubescence, becom-

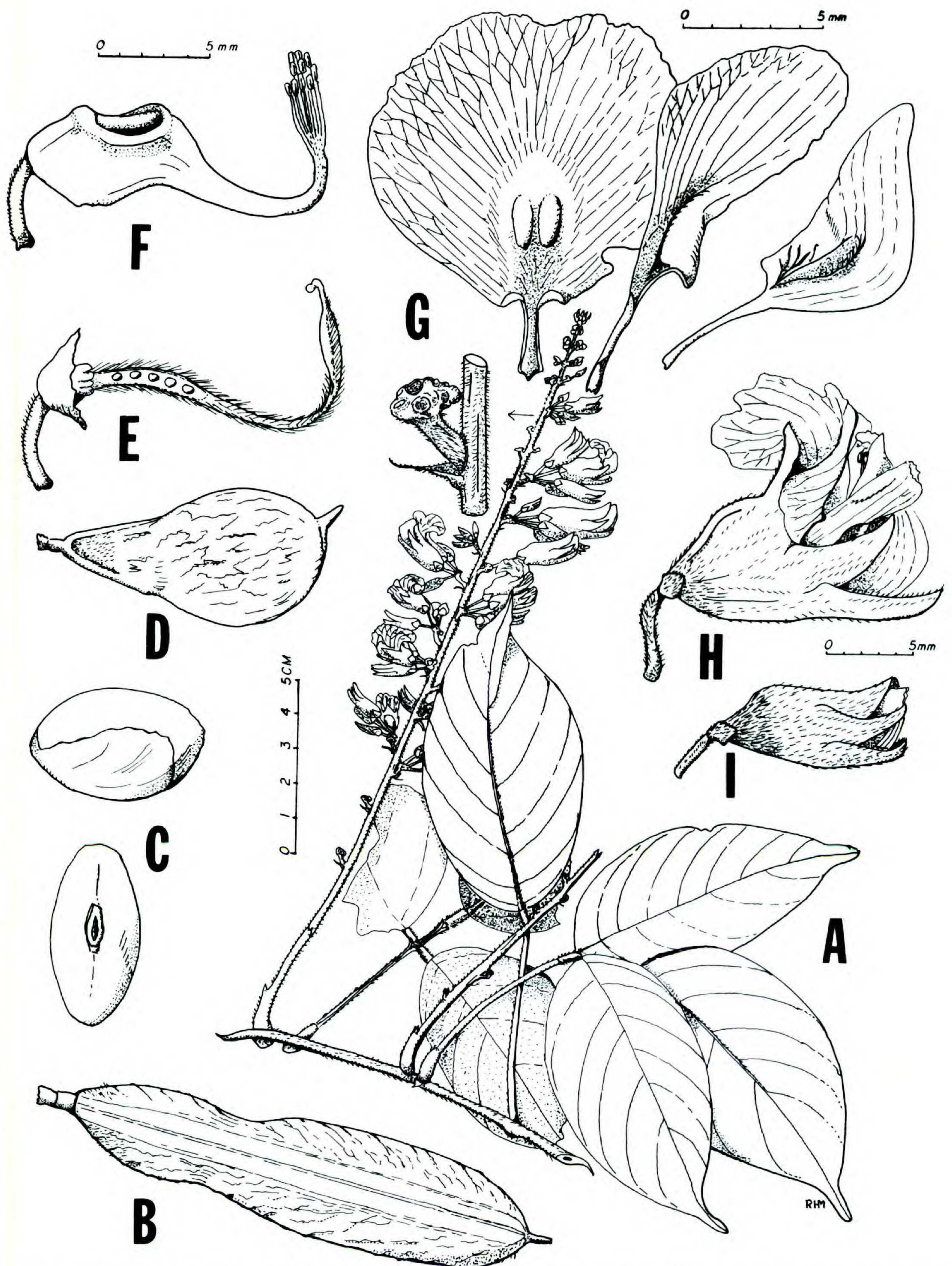


FIGURE 1. *Dioclea ruddiae*.—A. Flowering branch, Steyermark et al. 92713 (US).—B. Fruit, 3-seeded, dorsal view, Steyermark 107174 (US).—C. Seeds, dorsal and lateral views (with packing attached), Steyermark 107174 (NY).—D. Fruit, 1-seeded, Steyermark 107174 (NY).—E. Pistil showing ovule position, Maguire et al. 29930 (S).—F. Staminal sheath with pseudomonadelphous stamens, Maguire et al. 29930 (S).—G. Petals, standard, wing and keel, Steyermark et al. 92713 (K).—H. Flower, Maguire et al. 29930 (US).—I. Flower bud, Maguire et al. 29930 (US).

ing glabrescent, the upper suture raised, culminating in a persistent, upturned beak, the lower suture indistinct, 1–4-seeded; seeds soft, ellipsoid, to ca. $4.5 \times 3.2 \times 2.2$ cm, the hilum oblong, ca. 5.5 mm long.

Selected specimens examined. VENEZUELA. AMAZONAS: Sierra Parima, a unos 6–7 km al Oeste de la frontera Venezolana-Brasilera, Steyermark 107174 (NY, US). BOLÍVAR: south of El Dorado, Gentry et al. 10464 (JEF, MO); Distr. Roscio, sabanas y arbustales en la cumbre del Cerro Chirikayen, O. Huber & Alarcón 7628 (JEF, MYF); Cerro Venamo (parte Sur-Oeste), Cerca de los Limites con la Guayana Inglesa, Steyermark et al. 92713 (K, US).

Flowering collections date from January, March, and June in Bolívar, Venezuela. December flowering is reported in Amazonas, with fruit appearing 18 April through 23 May. Collectors report the calyx magenta, the petals lavender or magenta to purple, with the target spot on the standard yellow.

Collectors further report the species occasional to locally frequent from roadsides, savannas, and wooded hills and slopes to upland, humid forest. The altitude range is 795–1,580 m. Habitat may separate *Dioclea ruddiae* from the closely related *D. macrocarpa* Huber, where the habitat is noted as from floodplains and riverbanks in Brazil, Colombia, Ecuador, Guyana, Peru, and Surinam in addition to Venezuela.

The distinguishing characters within *Dioclea* of this new species are the stipules not produced below insertion, 10 perfect anthers, and the oblong seed hilum. These characters place the species in section *Macrocarpon* Amshoff (1939). The turgid, fleshy fruit, however, is distinct within section *Macrocarpon* and the closely related section *Platylobium* Benth. (1859) but similar to several species in section *Pachylobium* Benth. (1839), such as *D. malacocarpa* Ducke and *D. pulchra* Moldenke.

Dioclea macrocarpa differs from *D. ruddiae* by possessing papyraceous leaflets, mostly glabrous or glabrescent beneath; inflorescences frequently in cauliflorous clusters;

calyx tube glabrous or canescent puberulent; 4–8 ovules; and fruit flat, ca. 1 cm thick, frequently over 20 cm long, 3–8-seeded, with both sutures raised and with closely parallel ribs, the upper suture culminating in a short downturned beak. Fruit and seed have been illustrated by Ducke (1925).

In contrast, *Dioclea ruddiae* has subcoriaceous, subconduplicate leaflets, pubescent beneath; inflorescences seen are axillary and single; calyx tube with ferruginous pubescence; ca. 4 ovules; and fruit turgid, ca. 3 cm thick, to ca. 13 cm long, 1–4-seeded, with the sutural ribs indistinct, the upper suture culminating in a slender, upturned beak.

It is probable that reexamination of collections determined *Dioclea macrocarpa* from the Venezuelan Guayana will yield additional *D. ruddiae*.

The new species is named in honor of Dr. Velva E. Rudd, a renowned legume specialist and source of encouragement and support for other legume workers. I wish to thank Dr. Julian Steyermark for the opportunity to work on the *Flora of the Venezuelan Guayana* and for commenting on this manuscript. For the opportunity to study *Dioclea* material, I also thank the herbaria directors and curators of MO, NY, and US, in particular, as well as A, F, GH, IAN, MYF, S, and VEN.

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